

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. – 5. (Canceled)

6. (Previously Presented) A machine for punching out assembled electronic circuitry parts from a carrier tape with sprocket holes in a predetermined pitch along right and left side edges thereof, including a tape feeding station arranged to reel off an electronic parts carrier tape having a plural number of assembled electronic part sections at predetermined intervals in the longitudinal direction thereof, and a tape punching station arranged to punch out said electronic part sections successively from said carrier tape, characterized in that said machine comprises:

at least a pair of reel support shafts provided separately at said tape feeding station to reel off a carrier tape from a second supply reel to continue tape feed as soon as a carrier tape from a first supply reel is consumed to a last electronic part section; and

a tape switcher located in the course of a tape supply route between said tape feeding station and said tape punching station, and provided with upper and lower tape holder members movable toward and away from each other across said tape supply route and back and forth in the direction of tape supply, said upper and lower tape holder members being adapted to releasably hold said first and second carrier

tapes from opposite sides in an overlapped state and over a length corresponding to two units lengths of said electronic parts section on said carrier tapes, active and passive cutter blades provided in confronting positions on said upper and lower tape holder members to cut said first carrier tape at a longitudinally intermediate position, and splicing means adapted to splice a head end portion of said second carrier tape to a tail end portion of said first carrier tape in an overlapped state.

7. (Previously Presented) A machine as defined in claim 6, further comprising a pair of guide rollers adapted to guide a carrier tape from one of said first and second supply reels to said tape supply route and to locate a fore end portion of a carrier tape from the other one of said first and second reels at a standby position spaced from said tape supply route.

8. (Previously Presented) A machine as defined in claim 6, wherein said upper and lower tape holder members are each provided with positioning pins to be disengageably engaged in said sprocket holes, and suction holes for gripping said carrier tape at longitudinally spaced positions.

9. (Previously Presented) A machine as defined in claim 6, wherein a leader tape portion void of electronic parts sections is attached to head and tail ends of each carrier tape on said first and second supply reels.

10. (Previously Presented) A machine as defined in claim 6, further comprising a tape end sensor provided in the course of a tape supply route between

said tape feeding station and said tape punching station to detect a position of a last electronic part section on said first carrier tape, and adapted to produce an end detection signal to put said upper and lower tape holder members in a tape splicing operation.

11. (Previously Presented) A machine as defined in claim 6, wherein said upper and lower tape holder members are adapted to splice a head end portion of said second carrier tape to a tail end portion of said first carrier tape.

12. (Previously Presented) A method for replacing tape supply reels in feeding a carrier tape having sprocket holes with predetermined pitch along right and left side edges thereof and carrying a plural number of assembled electronic part sections at predetermined intervals in the longitudinal direction thereof, from a tape feeding station toward a tape punching station arranged to punch out said electronic part sections successively from said carrier tape, said method comprising the steps of:

providing and setting at least a pair of carrier tape supply reels at said tape feeding station to feed a carrier tape to said punching station firstly from a first supply reel and then from a second supply reel continuously in an uninterrupted manner;

providing tape holder members in the course of a tape supply route between said tape feeding station and said tape punching station, movable toward and away from each other across said tape supply route and back and forth in the direction of tape supply;

while a first carrier tape from said first supply reel is being fed to said punching section, letting one of said holder members grip a fore end portion of a second carrier tape from said second supply reel on a rear holder section having a length corresponding to one unit length of one of said electronic part sections;

letting the other tape holder member grip a tail end portion of said first carrier tape on front and rear holder sections as soon as a last electronic part section on said first carrier tape is punched out;

closing said tape holder members, one on the other, from opposite sides of said first and second carrier tapes, and cutting said first carrier tape at an intermediate position between said front and rear holder sections; and

advancing said second carrier tape by a distance corresponding to said one unit length of said electronic part sections, and splicing a head end portion of said second carrier tape to a tail end portion of said first carrier tape in an overlapped state.

13. (Previously Presented) A method of continuously punching out electronic circuitry parts from carrier tapes each carrying assembled electronic circuitry parts at predetermined intervals in the longitudinal direction thereof said method comprising the steps of:

providing and setting at least a pair of carrier tape supply reels at said tape feeding station to feed a carrier tape to said punching station firstly from a first supply reel and then from a second supply reel continuously in an uninterrupted manner;

providing tape holder members in the course of a tape supply route between said tape feeding station and said tape punching station, movably toward and away

from each other across said tape supply route and back and forth in the direction of tape supply;

while a first carrier tape from said first supply reel is being fed to said punching section, letting one of said holder member grip a fore end portion of a second carrier tape from said second supply reel on a rear holder section having a length corresponding to one unit length of one of said electronic part section;

letting the other tape holder member grip a tail end portion of said first carrier tape on front and rear holder sections as soon as a last electronic part section on said first carrier tape is punched out;

closing said tape holder members, one on the other, from opposite side of said first and second carrier tapes, and cutting said first carrier tape at an intermediate position between said front and rear holder sections; and

advancing said second carrier tape by a distance corresponding to said one unit length of said electronic part sections, and splicing a head end portion of said second carrier tape to a tail end portion of said first carrier tape in an overlapped state to continue tape feed to aid tape punching station.

14. (New) A machine for punching out assembled electronic circuitry parts from a carrier tape, including a tape feeding station arranged to reel off an electronic parts carrier tape having a plural number of assembled electronic part sections at predetermined intervals in the longitudinal direction thereof, and a tape punching station arranged to punch out said electronic part sections from said carrier tape, characterized in that said machine comprises:

at least a pair of reel support shafts provided separately at said tape feeding station to reel off a carrier tape from a second supply reel to continue tape feed as soon as a carrier tape from a first supply reel is consumed to a last electronic part section; and

a tape switcher located in the course of a tape supply route between said tape feeding station and said tape punching station, and provided with upper and lower movable tape holder members, said upper and lower tape holder members being adapted to releasably hold said first and second carrier tapes from opposite sides in an overlapped state, active and passive cutter blades provided in confronting positions on said upper and lower tape holder members to cut said first carrier tape at a longitudinally intermediate position, and splicing means adapted to splice a head end portion of said second carrier tape to a tail end portion of said first carrier tape in an overlapped state.

15. (New) A method for replacing tape supply reels in feeding a carrier tape and carrying a plural number of assembled electronic part sections at predetermined intervals in the longitudinal direction thereof, from a tape feeding station toward a tape punching station arranged to punch out said electronic part sections from said carrier tape, said method comprising the steps of:

providing and setting at least a pair of carrier tape supply reels at said tape feeding station to feed a carrier tape to said punching station firstly from a first supply reel and then from a second supply reel continuously in an uninterrupted manner;

providing movable tape holder members in the course of a tape supply route between said tape feeding station and said tape punching station;

while a first carrier tape from said first supply reel is being fed to said punching section, letting one of said holder members grip a fore end portion of a second carrier tape from said second supply reel on a rear holder section;

letting the other tape holder member grip a tail end portion of said first carrier tape on front and rear holder sections as soon as a last electronic part section on said first carrier tape is punched out;

closing said tape holder members, one on the other, from opposite sides of said first and second carrier tapes, and cutting said first carrier tape at an intermediate position between said front and rear holder sections; and

advancing said second carrier tape by a distance to overlap the first carrier tape, and splicing a head end portion of said second carrier tape to a tail end portion of said first carrier tape in an overlapped state.